

Work Order ID 136508

136508

Page 1

September 02, 2015 3:05:55 PM

Item ID: D4796-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Bearpaw
 Start Date: 9/1/2015 Start Qty: 4.00 *4* Cust Item ID:
 Required Date: 9/1/2015 Req'd Qty: 4.00 *4* Customer:
 Reference:

Approvals: Process Plan: SL Date: 01 50 90 3 Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
 Run Start *NR1*
 Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4796	B

120 0.00
 120 FLOW WATER JET
 Waterjet Memo
 FLOW CNC Waterjet Cut Blank as per D4796-1_blank
 (4) 02/15/10/20

SCRAP

130 0.00
 130 HAAS CNC VERTICAL MACHINING #1
 HAAS 1 Memo 0.00
 HAAS CNC vertical machine #1
 1-Inspect material for defects or damage prior to machining
 2-Machine as per FolioFB178 and Dwg
 FOLIO REV: B
 DWG REV: B
 3-Deburr
 DAS 44 15/11/03
 9-88

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 136508***136508***

Page 2

Item ID: D4796-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Bearpaw

Start Date: 9/1/2015

Start Qty: 4.00

4

Cust Item ID:

Required Date: 9/1/2015

Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140

QC2- Inspect parts off machine FAI/FAIB

0.00

140

QC

Memo

0.00

Quality Control

4

Ø

44
9-89 15/11/03

150

QC8- Inspect parts - second check

0.00

150

QC

Memo

0.00

Quality Control

P.T.O.

151

Identify as per dwg & Stock Location: _____

0.00

151

Packaging

Memo

0.00

Packaging

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>136508</u> Part No. <u>D4796-1</u> NCR No. _____	DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☒ Quality ☐ Other ☐			
Date : <u>16-01-23</u>	Step #: <u>100</u>	QTY Effective : <u>4</u>		MRB (QS1042) Approval DAS 9 9-89 <u>16-01-23</u>	
Description Work Order Deviation		Disposition		Completed By DAS 08 9-89 <u>16/01/27</u>	
D4796 is now in prelim with some dimension change R.C. design / dimension change.		Scrap & destroy		Lead hand / Supervisor Approval Verification DAS 9 9-89 <u>16-01-23</u>	
QC / QA Coordinator Approval DAS 9 9-89 <u>16-01-23</u>					
Root Cause Environment ☐ Design ☒ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☒ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 136508***136508***

Page 3

September 02, 2015 3:05:55 PM

Item ID: D4796-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Bearpaw

Start Date: 9/1/2015 Start Qty: 4.00

4

Cust Item ID:

Required Date: 9/1/2015 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.00

Quality Control

MLJ
JAN 28 2016
Ø

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabelled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

Page 1

September 02, 2015 3:06:00 PM

Work Order ID: 136508

136508

Parent Item: D4796-1

D4796-1

Parent Item Name: Bearpaw

Start Date: 9/1/2015

Required Date: 9/1/2015

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A NEW ISSUE 13-03-25 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB10		Purchased		No			sf	235.8810		22.31579			

MUHMWB10

UHMW 1" Black - 48"x120" Tivar Mfg.#52480104

DL15/10/20

Location

Loc Qty

Loc Code

MAT

189.514

m131661

43.514

m132063

146

MAT018

46.367

m131335

46.367

133248

23



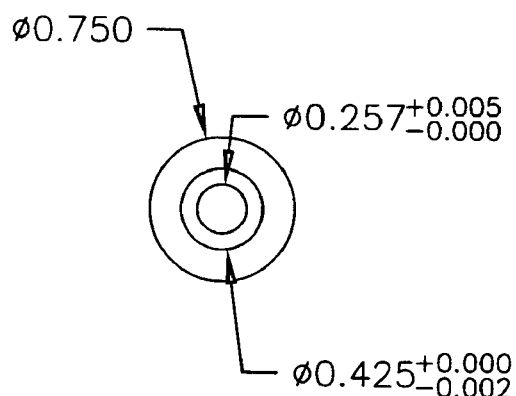
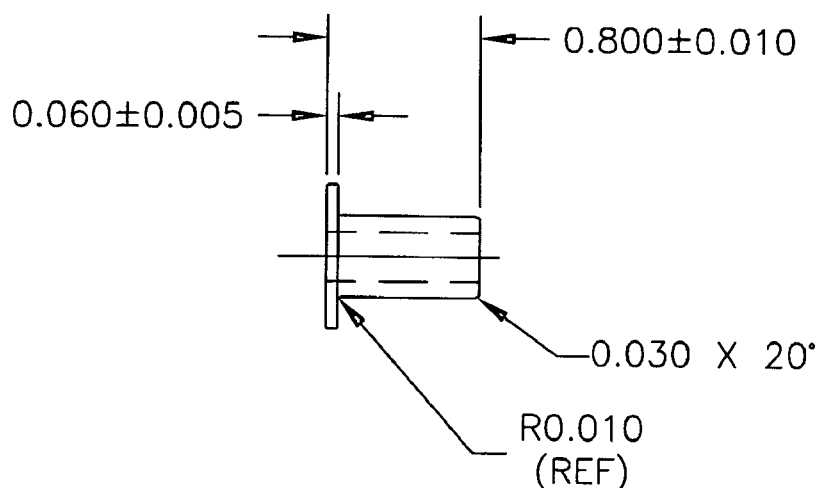
DESIGN <i>RH</i>	DRAWN BY <i>RH</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2570	REV. B SHEET 1 OF 1
DATE 07.04.17		TITLE BUSHING	SCALE 1:1
A	96.09.16	NEW ISSUE	
B	07.04.17	UPDATE NOTES	

RELEASED
07.06.28 *[Signature]*

20150903

SH

136508



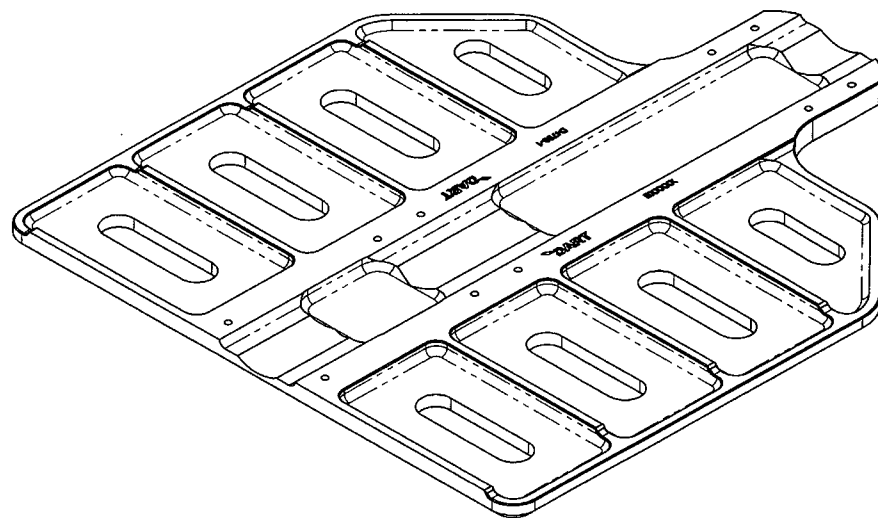
D2570 BUSHING

D2570 BUSHING

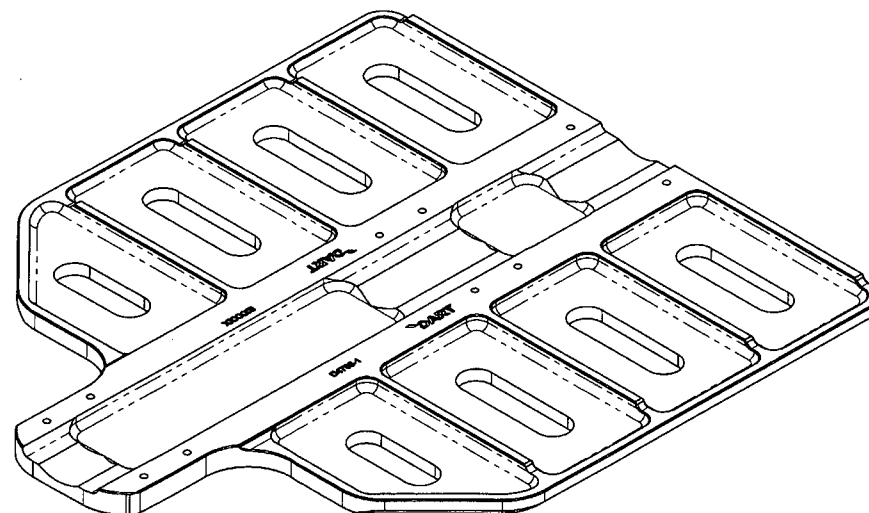
- 1) MATERIAL: AISI 303 ROUND BAR (REF. DART SPEC. M303R)
- 2) FINISH: NONE
- 3) ALL DIMENSIONS ARE INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) BREAK ALL UNMARKED SHARP EDGES TO 0.010 MAX

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D4796-1 BEARPAW

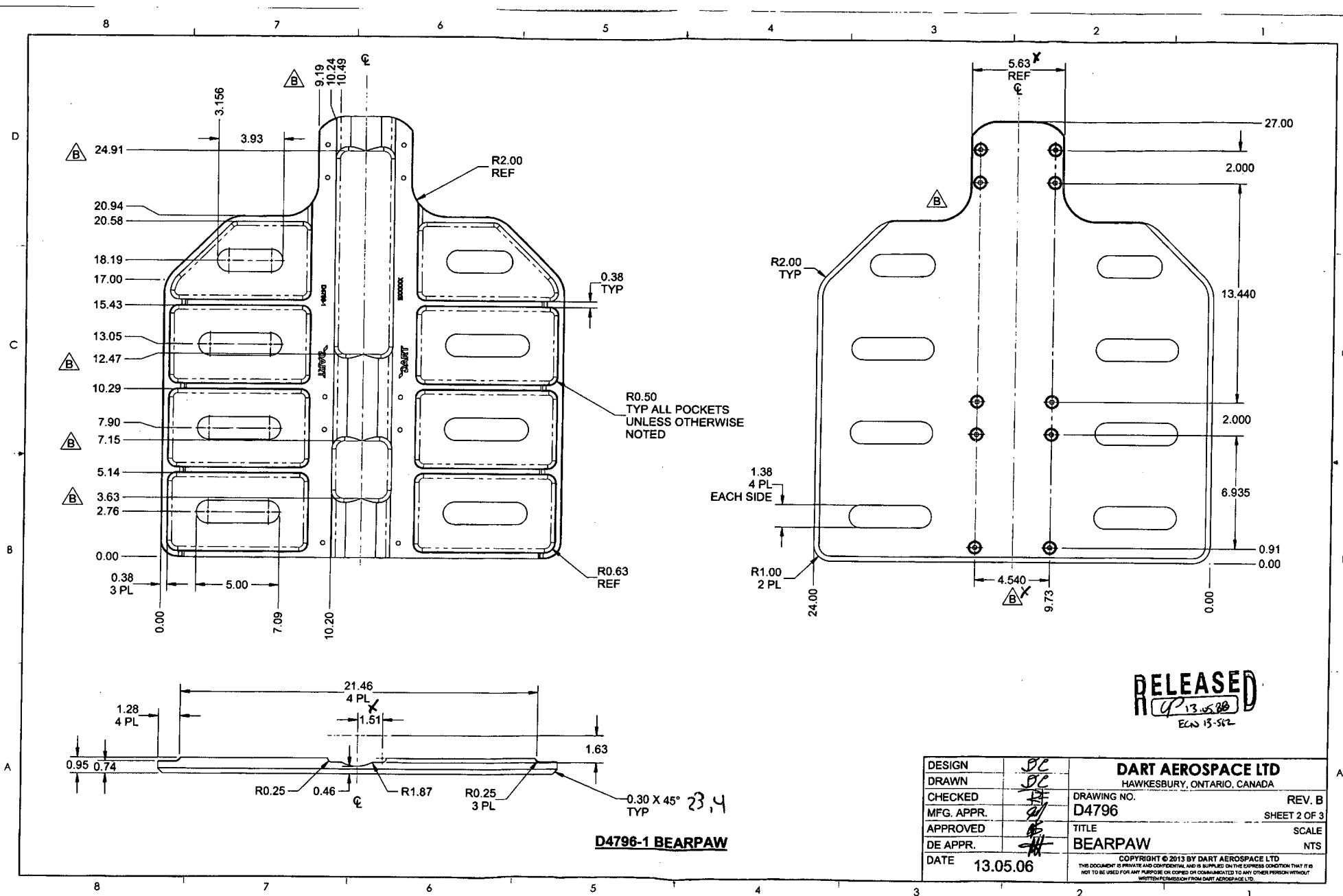


RELEASED
 13.05.06
 ECN 13-562

NOTES:

- 1) MATERIAL: BLACK UHMW TIVAR 1000 VIRGIN MATERIAL SHEET, 1.00 THICK
REF DART SPEC MUHMWB10
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.3 0.010 - 0.012 DP WITH A MINIMUM 0.010 RAD
- 7) WEIGHT: 9.59 lbs
- 8) ENGRAVE "DART" LOGO AS SHOWN 0.010 - 0.012 DP WITH A MINIMUM 0.010 RAD

B	MODIFIED SHAPE, MOVE HOLES FROM 4.938 TO 4.54 APART. ZN B2-2. ADD POCKETS FOR SKIDTUBE, ZN B6-2, C6-2. ADD SECTION B-B, ZN D2-3.	DC	13.05.06
A	NEW ISSUE	DC	13.03.19
REV.	DESCRIPTION	BY	DATE
DESIGN	DC	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DC		
CHECKED	DC	DRAWING NO.	REV. B
MFG. APPR.	DC	D4796	SHEET 1 OF 3
APPROVED	DC	TITLE	SCALE
DE APPR.	DC	BEARPAW	NTS
DATE	13.05.06	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



D4796-1 BEARPAW

RELEASED
 13.05.06
 ECN 13-512

DESIGN	DC	DART AEROSPACE LTD	
DRAWN	DC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DE	DRAWING NO. D4796	REV. B
MFG. APPR.	DE	SHEET 2 OF 3	
APPROVED	DE	TITLE BEARPAW	SCALE
DE APPR.	DE	NTS	
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D4796-1 BEARPAW
(SUPPLEMENTAL VIEW)

SECTION B-B
C6-3

SECTION A-A
C6-3

RELEASED
13.05.06
ECN 13-502

DESIGN	BC	DART AEROSPACE LTD	REV. B
DRAWN	BC	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PF	DRAWING NO. D4796	SHEET 3 OF 3
MFG. APPR.	PF	TITLE	SCALE
APPROVED	PF	BEARPAW	NTS
DE APPR.	PF	COPYRIGHT © 2013 BY DART AEROSPACE LTD	
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DART AEROSPACE LTD		Work Order:	136508
Description: Bearpaw		Part Number:	D4796-1
Inspection Dwg: D4796	Rev: B	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.95	+/-0.030	.947	/		Vern	FK-04
0.74	+/-0.030	.727	/		"	"
0.46	+/-0.030	.461	/		"	"
0.30 x 45°	+/-0.030 x +/-0.5°	.30 x 45°	/		"	"
0.38	+/-0.030	.377	/		"	"
2.76	+/-0.030	2.76	/		"	"
3.93	+/-0.030	3.934	/		"	"
0.38	+/-0.030	.381	/		"	"
5.00	+/-0.030	5.001	/		"	"
10.20	+/-0.030	10.20	/		Tape	FK-05
1.38	+/-0.030	1.381	/		Vern	FK-04
5.63	+/-0.030	5.625	/		"	"
27.00	+/-0.030	27.000	/		Tape	FK-05
2.000	+/-0.005	2.000	/		Vern	FK-04
6.935	+/-0.005	6.935	/		Vern	FK-08
0.91	+/-0.030	.907	/		Vern	FK-04
4.540	+/-0.005	4.543	/		"	"
24.00	+/-0.030	24.00	/		Tape	FK-05
0.24	+/-0.030	.243	/		Vern	FK-04
3.60	+/-0.030	3.60	/		"	"
R0.25	+/-0.030	.25	/		R-G.	
0.50	+/-0.030	.490	/		Vern	FK-04
6.40	+/-0.030	6.401	/		Vern	FK-08
3.52	+/-0.030	3.517	/		Vern	FK-04
0.040 x 45°	+/-0.010 x +/-0.5°	.04 x 45°	/		"	"
Ø0.261	+0.006/-0.001	.260	/		"	"
0.650	+/-0.030	.653	/		"	"
0.07 x 45°	+/-0.030 x +/-0.5°	.07 x 45°	/		"	"
DAS						

Measured by:	44	Audited by:		Preliminary Approval:	
Date:	15/11/03	Date:		Date:	
Rev	Date	Change	Revised by	Approved	
A	14.05.06	New Issue	KJ		